



2016 Astrophysics Medium Explorer (MIDEX), Mission of Opportunity (MO) & USPI Preproposal Conference

Overview of the Evaluation, Categorization, and Selection Process

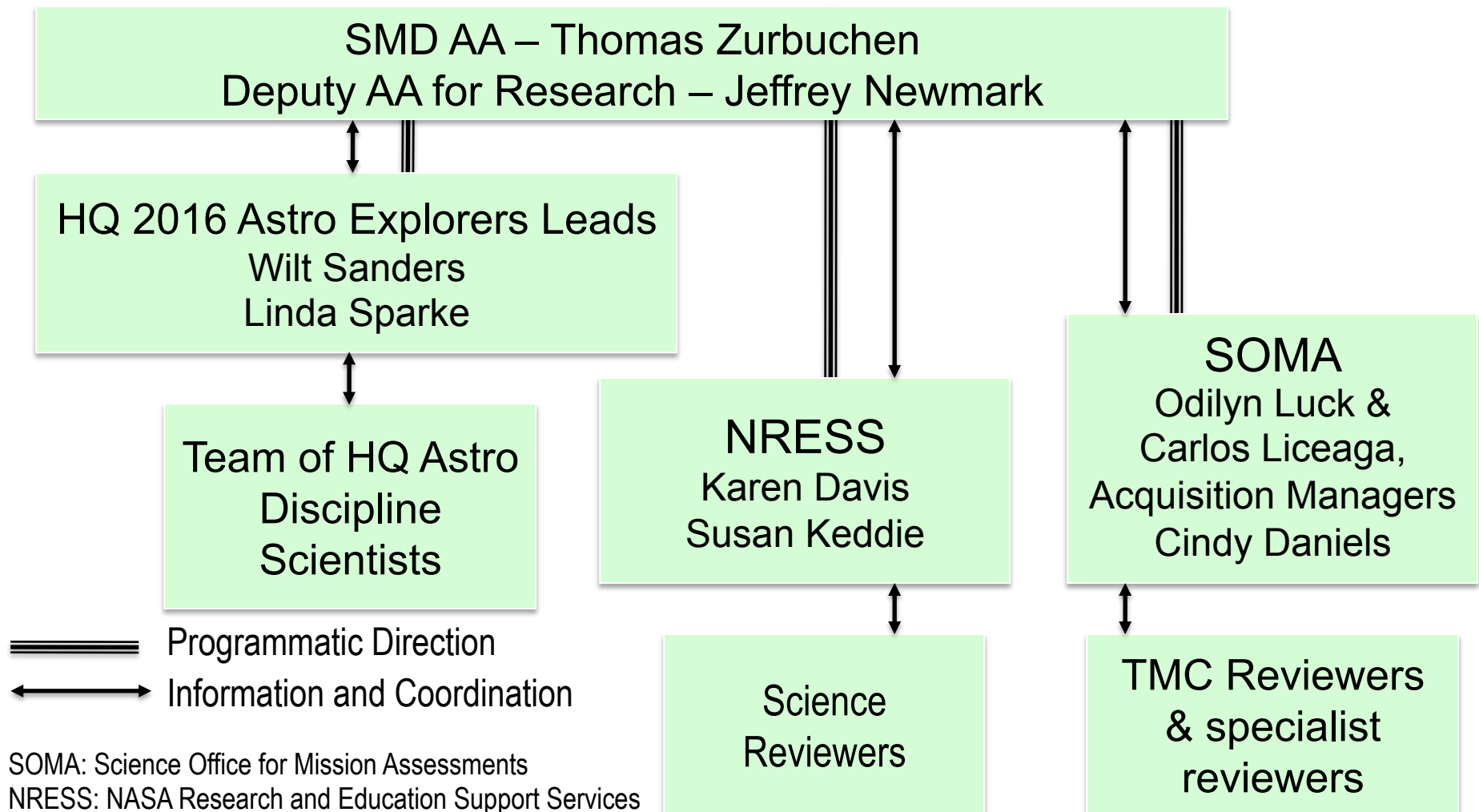
Wilton Sanders
Astrophysics Explorers Program Scientist
NASA Headquarters
October 6, 2016



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

2016 Astrophysics Explorers Team





Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

SOMA Background

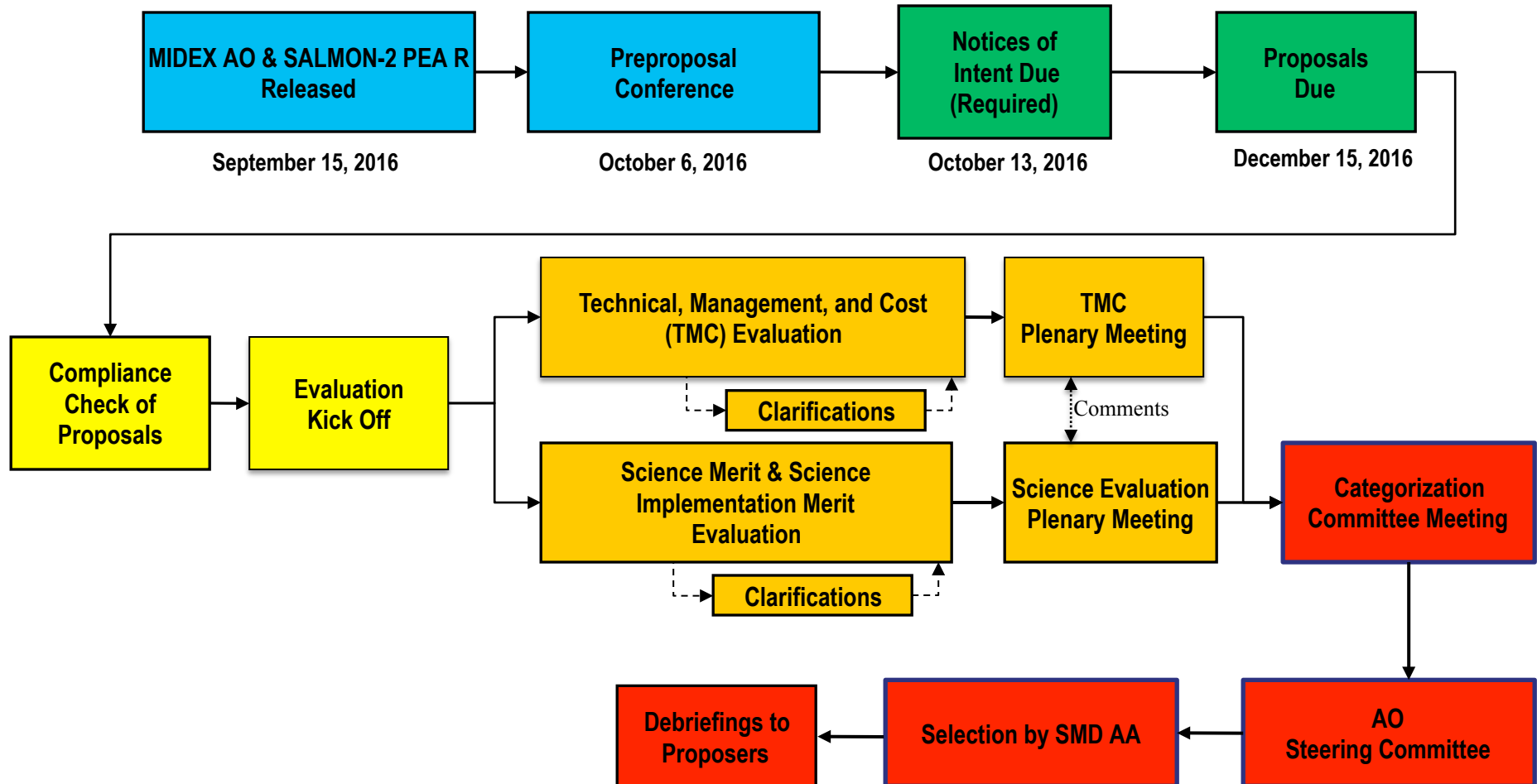
- The NASA Science Mission Directorate (SMD) **Science Office for Mission Assessments (SOMA)** was established in 1996 to support the Discovery and Explorer Programs. The office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder, and others.
- The TMC process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Proposal Evaluation Flow





Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

- **2016 MIDEX AO is based on the SMD Standard AO template.**
- **Requirements** are identified, numbered, and specific.
 - There are 87 requirements in the 2016 MIDEX AO main body
 - When Sections do not levy requirements they do not have numbered requirements.
- **Evaluation Factors** are identified, numbered, and specific.
 - 4 for Science Merit
 - 6 for Scientific Implementation Merit and Feasibility
 - 5 for Technical, Management, and Cost (TMC) Feasibility
- Appendix B has numbered **requirements on Proposal Preparation**
 - There are 67 specific requirements for the format and content of Step 1 proposals [more altogether as some Appendix B requirements have more than one part]



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

In response to proposal community input to the Standard AO Request for Information NNH15ZDA013L, issued on December 2, 2015, the following proposal requirements have been deferred until Step 2:

- Detailed disposal plan (Section 5.2.7)
- Science Enhancement Option or its cost (Section 5.1.5)
- Independent Verification and Validation of Software (Section 4.5.1)
- Costing of Conjunction Assessment Risk Analysis (Section 4.5.4)
- Schedule-based end-to-end data management plan (Requirement B-23)
- Requirements for real year dollar costs (Section 5.6.2, Requirement B-13, Requirement B-50, and Requirement B-51)

Details on each deferral are provided in the applicable section(s).

As many of the deferred requirements included budgeting for related activities, proposing at the AO Cost Cap is strongly discouraged, unless associated costs have been included in the proposed PI-Managed Mission Cost and/or Total Mission Cost (see Section 4.3.1 and Section 4.3.2).



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

- **2016 MO PEA R is an appendix to the SALMON-2 AO.**
- **Requirements** are as given in SALMON-2, as amended by PEA R.
 - Although the SALMON-2 is not yet based on the standard AO template, the intent has been to standardize the two solicitations such that requirements are the same for the MIDEX AO and MO PEA R.
- **Evaluation Factors** are identified in the PEA, numbered, and specific.
 - 4 for Science Merit
 - 6 for Scientific Implementation Merit and Feasibility
 - 5 for Feasibility of the Mission Implementation, Including Cost Risk
- SALMON-2 Appendix B has **requirements on Proposal Preparation**, and are amended by PEA R

In the event of an apparent conflict between the guidelines, the order of precedence is: the PEA R, then the SALMON-2 AO, then SALMON-2 Appendix B, then SALMON-2 Appendix A.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

2016 MDEX and MO investigations will be evaluated and selected through a two-step competitive process.

- Step 1 is the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO.
- As the outcome of Step 1, NASA intends to fund approximately two or three Step-1 MDEX proposals and one or more MO proposals to proceed to a 9-month Phase A concept study and submit Concept Study Reports to NASA.
- Step 2 is the preparation, submission, evaluation, and continuation decision (downselection) of the Concept Study Reports.
- As the outcome of Step 2, NASA intends to select one MDEX investigation and up to two MO investigations to proceed into Phase B and subsequent mission phases.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

- All proposals will be initially screened to determine their compliance to requirements and constraints of the applicable AO.
- Proposals that do not comply may be declared noncompliant and returned to the proposer without further review. A submission compliance checklist is provided in the 2016 MDEX AO and the SALMON-2 AO.
- Compliant proposals will be evaluated against the criteria specified in Section 7.2 of the MDEX AO and SALMON-2 AO by panels of individuals who are peers of the proposers.
- AO and MO Proposals will be evaluated by more than one panel (e.g., a science panel and a technical/management/cost panel); the panels evaluate proposals against different criteria.
- Panel members will be instructed to evaluate every proposal independently without comparison to other proposals.
- These panels may be augmented through the solicitation of non-panel (mail in) reviews, which the panels have the right to accept in whole or in part, or to reject.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

- During the evaluation and selection process, NASA may request clarification of specific points in a proposal.
- Before finalizing the evaluation of the feasibility of the mission implementation, NASA will request clarification on all potential major weaknesses in the science merit, science implementation merit, and TMC feasibility of mission implementation that were identified in the proposal.
- Proposers will receive communication in advance of the clarification round with notification of the schedule, requirements, and limitations.
- On the day of the clarification round, proposers will receive a second communication with the potential major weaknesses and instructions for responding. Proposers will have at least 24 hours to respond.
- To prevent proposal teams from improving their proposal, thereby requiring NASA to allow all proposal teams to improve their proposals, the format of the clarification is highly constrained to be one of the following 5 formats.
- Responses that go beyond the permitted response format will be deleted and will not be provided to the evaluation panels.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Response Type 1: You may identify a place in your proposal where information relevant to this preliminary TMC major weakness may be found.

- You may identify the location by Section number, page number, paragraph number, line number, Table number, Figure number, or any other pointer. You may not provide any other feedback other than a pointer to one or more specific locations in your proposal. You may not provide a sentence or a paragraph of explanation as to why you think these places in the proposal address the preliminary TMC major weakness. Any such explanation could be considered an improvement to the proposal and will be deleted.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Response Type 2: You may confirm that the preliminary TMC major weakness is not addressed in your proposal.

- You may not provide a sentence or a paragraph of explanation as to why you think this is okay or why the preliminary TMC major weakness is invalid. Any such explanation could be considered an improvement to the proposal and will be deleted.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Response Type 3: You may state that the preliminary TMC major weakness is invalidated by information that is common knowledge or state-of-the-art and is therefore not included in the proposal.

- You may suggest a commonly known topic that the evaluators should be familiar with in order to properly evaluate this aspect of your proposal. Topic titles must be limited to a few words (subject title only, no explanations) so that evaluators may, on their own, consult the public literature for information and references that are not contained in your proposal.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Response Type 4: You may state that a numerical calculation is wrong, where such a numerical calculation has been carried out by the evaluation team and is included or referenced in a preliminary TMC major weakness.

- You may identify the location of data relevant to the numerical calculation by Section number, page number, paragraph number, line number, Table number, Figure number, or any other pointer. You may not provide any other feedback other than a pointer to one or more specific locations in your proposal.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Response Type 5: You may state that a typographical error appears in the proposal and that the correct data is available elsewhere inside or outside of the proposal (a variation of Response Type 3).

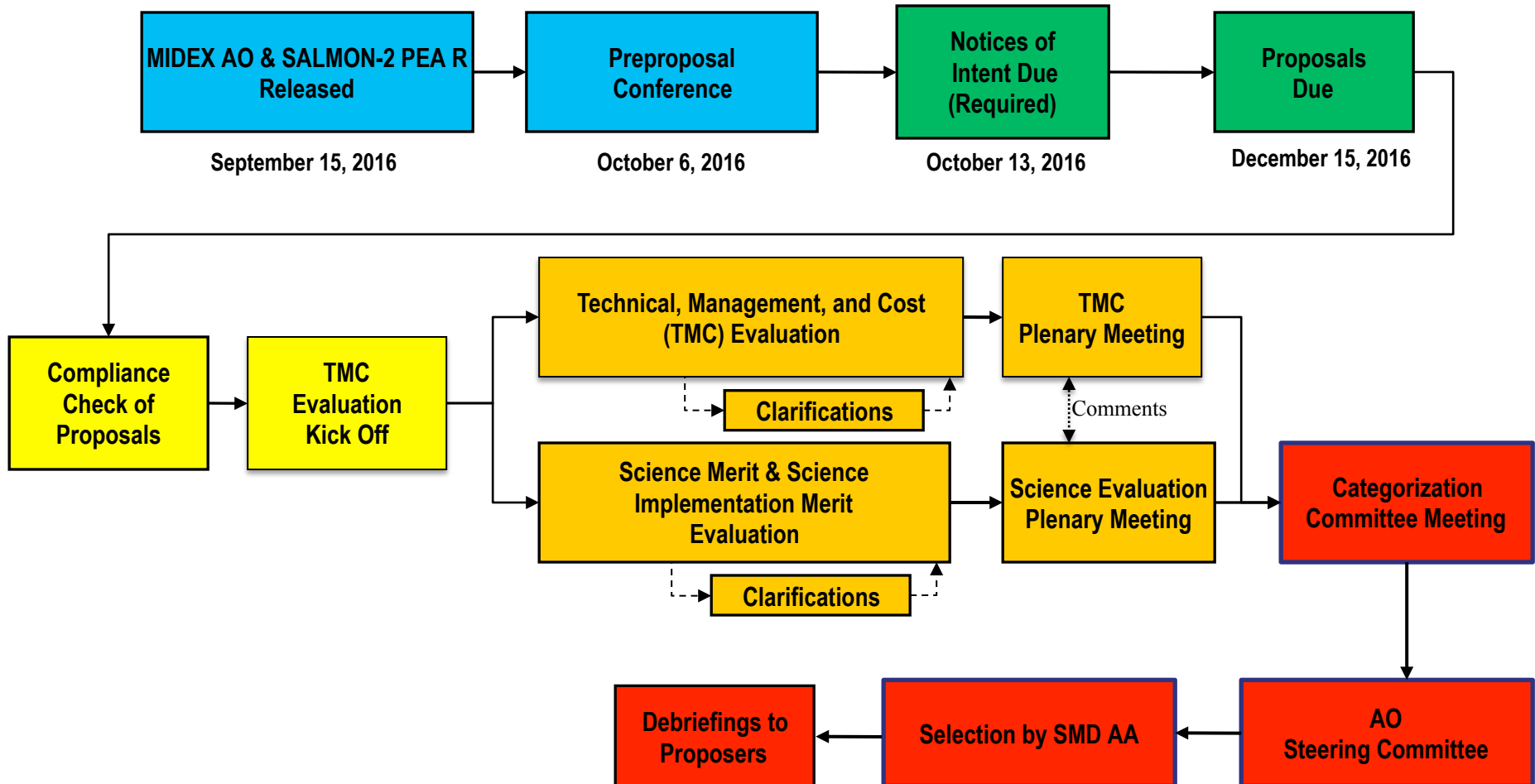
- You must indicate that the evaluation team may find the correct datum in the proposal (follow Response Type 1 instructions) or in a publicly available document published prior to the submission of your proposal. You may provide a reference to the previously published document including reference to the location in the document where the correct datum may be found. Uniform Resource Locator (URL) specification is allowed. You may not provide the corrected datum in your response. Any such corrected data or references to documents published after your proposal was submitted, could be considered an improvement to the proposal, which is not permitted.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Step 1 Categorization and Selection Overview





Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Categorization Committee

Upon completion of the evaluations, the results will be presented to the Categorization Committee, an *ad hoc* subcommittee of the SMD AO Steering Committee composed solely of Civil Servants and appointed by the SMD Deputy Associate Administrator for Research.

This committee will consider the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e).

The definitions of the categories are given on the next slide.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

- Category I. Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and data that can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.
- Category II. Well-conceived and scientifically or technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.
- Category III. Scientifically or technically sound investigations, which require further development. Category III investigations may be funded for development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Steering Committee

- Once Categorization has been completed, the Evaluation is considered complete unless questioned by a subsequent Steering Committee review.
- The AO Steering Committee will conduct an independent assessment of the Evaluation and Categorization processes regarding their compliance to established policies and practices, as well as the completeness, self-consistency, and adequacy of all supporting materials.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Selection Process

- After the review by the AO Steering Committee, the final evaluation results will be presented to the Associate Administrator for the Science Mission Directorate, who will make the final selections.
- As the Selection Official, the SMD Associate Administrator may consult with senior members of SMD and the Agency concerning the selections.
- The Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).
- As part of the selection decision, a decision will be made as to whether or not any Category III proposals will receive funding for technology development.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

Post- Selection Debriefings

- Proposers of investigations will be notified in writing and offered oral debriefings for themselves and representatives from each of their main partners.
- Written debriefing materials will be provided ahead of the time of the oral debriefing. Such debriefings may be in person at NASA Headquarters or by telephone if the proposal PI prefers.



Evaluation, Categorization, and Selection Process

2016 Astrophysics
Explorers Preproposal
Conference

References:

Explorer Acquisition Home Page

The 2016 Astrophysics Explorers Acquisition Homepage, available at <http://explorers.larc.nasa.gov/APMIDEX2016/>, will provide updates and any AO addenda during the Explorer AO solicitation process. It provides links to the Program Library, a list of potential teaming partners, and questions and answers regarding the AO.

Program Library

The Explorer Program Library provides additional regulations, policies, and background information on the Explorer Program. The Program Library is accessible at:

<http://explorers.larc.nasa.gov/APMIDEX2016/MIDEX/programlibrary.html>,
or

<http://explorers.larc.nasa.gov/APMIDEX2016/MO/programlibrary.html>